STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

DRINKING WATER & RADIOLOGICAL
PROTECTION DIVISION
3423 N MARTIN L KING JR BLVD
PO BOX 30630
LANSING MI 48909-8130

February 10, 2000

TO: Local Health Departments
Noncommunity Program Coordinators

FROM: Richard L. Overmyer, R.S., Chief
Noncommunity Unit
Ground Water Supply Section

Michael S. Gaber, R.S., Chief
Well Construction Unit
Drinking Water and Radiological Protection Division

NCWS 00-03

SUBJECT: Direct Disinfection of Wells with Pellet Chlorinators

Sanitarians occasionally encounter private and noncommunity public water supplies using pellet chlorinators for continuous disinfection in the well. The attached advertisement brochure shows a typical installation. These systems are not approved for noncommunity public water supplies and are to be ordered removed if encountered. Their use on private water supplies is not advised.

The pellet chlorinator is installed at the well head and a hole is cut into the well cap to accommodate the dispensing tube from the chlorinator. The pellet chlorinator is then electrically interconnected with the well pump. When the pump is running, the pellet chlorinator will drop dry (calcium hypochlorite) tablets into the well. There are several concerns with these systems.

- The source water for a public water supply or a private water supply must meet bacteriologic drinking water standards. A public water supply must seek a new source if a well is contaminated, and if a safe source cannot be found, then a noncommunity water supply owner must provide complete treatment. Direct chlorination at the well does not allow for the collection of a raw water sample. Therefore, it is not possible to determine the bacteriologic quality of the source water.
- Chlorine is a strong oxidizer. Oxidization of iron, manganese, sulfates and other minerals will occur in the well. This can cause problems with plugging of pump suction and well screens.
- The chlorine pellets have been known to settle onto pumps, electrical cables, and screens. The chlorine is very corrosive when in direct contact with these well components. This has caused the loss of a submersible pump when a brass pump connection to a drop pipe was eroded away. The life expectancy of pumps, screens and electrical components can be severely shortened.
- An acceptable chlorine dosage rate must be maintained. It is difficult to control the disinfection rate and concentration with pellet chlorinators. When necessary, chlorine can be injected at the beginning of the distribution system for treatment of aesthetic water quality problems. However, the chlorine must be injected in a manner that will provide consistent levels of chlorine concentration (this is usually done with a positive displacement chlorinator).

EQP 0100e
(Rev. 10/96)

A supplier of water at a type II water supply, where treatment is employed, shall do the following:

- Prior to installation, the supplier shall provide plans and specifications showing the layout of the treatment system to the department for approval.
- Submit monthly operation reports providing information, as specified by the department, on general system operation and maintenance.
- Type II systems that disinfect or treat drinking water for public health purposes shall have a certified operator. MDEQ is concerned with the introduction of chemicals into a water supply system. The maintenance and filling of treatment units by a noncertified individual create the potential for the introduction of contaminants directly into the water supply system.

Please contact your noncommunity program consultant if you have questions or wish assistance in assessing a pellet chlorinator or any other treatment system.

ROG:sw
Attachment